

SEQUENCE LISTING

<110> Khleif, Samir N.
Berzofsky, Jay A.

<120> METHODS AND COMPOSITIONS FOR CO-STIMULATION OF
IMMUNOLOGICAL RESPONSES TO PEPTIDE ANTIGENS

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<210> 1

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 1

Glu	Gln	Met	His	Glu	Asp	Ile	Ile	Ser	Leu	Trp	Asp	Gln	Ser	Leu	Lys
1				5				10						15	

Pro	Cys	Val	Lys	Arg	Ile	Gln	Arg	Gly	Pro	Gly	Arg	Ala	Phe	Val	Thr
			20					25					30		

Ile	Gly	Lys
		35

<210> 2

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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

Arg Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile Gly Lys
 35 40 45

<210> 5
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: HIV PEPTIDE
 ANTIGEN

<400> 5
 Asp Arg Val Ile Glu Val Val Gln Gly Ala Tyr Arg Ala Ile Arg His
 1 5 10 15
 Ile Pro Arg Arg Ile Arg Gln Gly Leu Glu Arg Arg Ile Gln Arg Gly
 20 25 30
 Pro Gly Arg Ala Phe Val Thr Ile Gly Lys
 35 40

<210> 6
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<220>
 <223> Description of Artificial Sequence: HIV PEPTIDE
 ANTIGEN

<400> 6
 Asp Arg Val Ile Glu Val Val Gln Gly Ala Tyr Arg Ala Ile Arg Arg
 1 5 10 15
 Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile Gly Lys
 20 25 30

<210> 7
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 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 7

Ala Gln Gly Ala Tyr Arg Ala Ile Arg His Ile Pro Arg Arg Ile Arg
1 5 10 15

Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile Gly Lys
20 25 30

<210> 8

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 8

Glu Gln Met His Glu Asp Ile Ile Ser Leu Trp Asp Gln Ser Leu Lys
1 5 10 15

Pro Cys Val Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Thr
20 25 30

Thr Lys Asn
35

<210> 9

<211> 39

<212> PRT

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 9

Lys Gln Ile Ile Asn Met Trp Gln Glu Val Gly Lys Ala Met Tyr Ala
1 5 10 15

Pro Pro Ile Ser Gly Gln Ile Arg Arg Ile His Ile Gly Pro Gly Arg
20 25 30

Ala Phe Tyr Thr Thr Lys Asn
35

<210> 10
<211> 39
<212> PRT
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<220>
<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 10
Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys Ile
1 5 10 15

Glu Pro Leu Gly Val Ala Pro Thr Arg Ile His Ile Gly Pro Gly Arg
20 25 30

Ala Phe Tyr Thr Thr Lys Asn
35

<210> 11
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<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 11
Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val Val Gln Gly Ala
1 5 10 15

Tyr Arg Ala Ile Arg His Ile Pro Arg Arg Ile Arg Gln Gly Leu Glu
20 25 30

Arg Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Lys Asn
35 40 45

<210> 12
<211> 43
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 12

Asp Arg Val Ile Glu Val Val Gln Gly Ala Tyr Arg Ala Ile Arg His
1 5 10 15

Ile Pro Arg Arg Ile Arg Gln Gly Leu Glu Arg Arg Ile His Ile Gly
20 25 30

Pro Gly Arg Ala Phe Tyr Thr Thr Lys Ile Asn
35 40

<210> 13
<211> 30
<212> PRT
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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 13

Asp Arg Val Ile Glu Val Val Gln Gly Ala Tyr Arg Ala Ile Arg Arg
1 5 10 15

Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Lys Asn
20 25 30

<210> 14
<211> 31
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 14

Ala Gln Gly Ala Tyr Arg Ala Ile Arg His Ile Pro Arg Arg Ile Arg

1	5	10	15
Arg	Ile	His	Ile
Gly	Pro	Gly	Arg
Ala	Phe	Tyr	Thr
Thr	Thr	Lys	Asn
20	25	30	

<210> 15
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<220>
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<400> 15
Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile Gly Lys
1 5 10 15

<210> 16
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 <212> PRT
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<220>
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<400> 16
Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
1 5 10

<210> 17
 <211> 10
 <212> PRT
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<220>
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<400> 17
Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr
1 5 10

<210> 18
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 <212> PRT
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 <220>
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 <400> 18
 Ile Gly Pro Gly Arg Ala Phe Tyr Ala Thr
 1 5 10

<210> 19
 <211> 10
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 <400> 19
 Lys Gly Pro Gly Arg Val Ile Tyr Ala Thr
 1 5 10

<210> 20
 <211> 10
 <212> PRT
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 <400> 20
 Ile Gly Pro Gly Arg Ala Phe His Thr Thr
 1 5 10

<210> 21
 <211> 10
 <212> PRT
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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 21

Ile Gly Pro Gly Arg Thr Leu Tyr Ala Arg
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<210> 22

<211> 10

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 22

Leu Gly Pro Gly Arg Val Trp Tyr Thr Thr
1 5 10

<210> 23

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 23

Ile Gly Pro Gly Arg Ala Phe Arg Thr Arg
1 5 10

<210> 24

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 24

Arg Ile Gln Arg Gly Pro Gly Arg Ala Phe Val Thr Ile Gly Lys
1 5 10 15

<210> 25
<211> 15
<212> PRT
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<220>
<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 25
Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Thr Thr Lys Asn
1 5 10 15

<210> 26
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 26
Ser Ile Thr Lys Gly Pro Gly Arg Val Ile Tyr Ala Thr Gly Gln
1 5 10 15

<210> 27
<211> 15
<212> PRT
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<220>
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ANTIGEN

<400> 27
Ser Ile His Ile Gly Pro Gly Pro Ala Phe Tyr Ala Thr Gly Asp
1 5 10 15

<210> 28
<211> 15
<212> PRT
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<220>
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<400> 28
Ser Leu Ser Ile Gly Pro Gly Arg Ala Phe Arg Thr Arg Glu Ile
1 5 10 15

<210> 29
<211> 15
<212> PRT
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<400> 29
Ser Ile Ser Ile Gly Pro Gly Arg Ala Phe Phe Ala Thr Thr Asp
1 5 10 15

<210> 30
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
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ANTIGEN

<400> 30
Ser Ile Tyr Ile Gly Pro Gly Arg Ala Phe His Thr Thr Gly Arg
1 5 10 15

<210> 31
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
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ANTIGEN

<400> 31

Gly Ile Ala Ile Gly Pro Gly Arg Thr Leu Tyr Ala Arg Glu Lys
 1 5 10 15

<210> 32
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<220>
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<400> 32
 Arg Val Thr Ile Gly Pro Gly Arg Val Trp Tyr Thr Thr Gly Glu
 1 5 10 15

<210> 33
 <211> 15
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<400> 33
 Ser Ile Arg Ile Gly Pro Gly Lys Val Phe Thr Ala Lys Gly Gly
 1 5 10 15

<210> 34
 <211> 15
 <212> PRT
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<400> 34
 Gly Ile His Phe Gly Pro Gly Gln Ala Leu Tyr Thr Thr Gly Ile
 1 5 10 15

<210> 35
 <211> 14

<212> PRT
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<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
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<400> 35

Ser Thr Pro Ile Gly Leu Gly Gln Met Tyr Thr Thr Arg Gly
1 5 10

<210> 36

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 36

Ser Thr Pro Ile Gly Leu Gly Gln Ala Leu Tyr Thr Thr Arg Ile
1 5 10 15

<210> 37

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 37

Arg Thr Pro Thr Gly Leu Gly Gln Ser Leu Tyr Thr Thr Arg Ser
1 5 10 15

<210> 38

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 38
Gln Ile Asp Ser Lys Leu Arg Glu Gln Phe Gly Asn Asn Lys
1 5 10

<210> 39
<211> 20
<212> PRT
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<220>
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ANTIGEN

<400> 39
Gly Ser Asp Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Phe Ile Asn
1 5 10 15

Met Trp Gln Glu
20

<210> 40
<211> 15
<212> PRT
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<220>
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ANTIGEN

<400> 40
Asn Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn
1 5 10 15

<210> 41
<211> 15
<212> PRT
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<220>
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ANTIGEN

<400> 41
Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp Asn

1 5 10 15

<210> 42
<211> 15
<212> PRT
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<220>
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ANTIGEN

<400> 42
Arg Ile Val Glu Leu Leu Gly Arg Arg Gly Trp Glu Ala Leu Lys
1 5 10 15

<210> 43
<211> 25
<212> PRT
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<220>
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ANTIGEN

<400> 43
Ile Glu Thr Val Pro Val Lys Leu Lys Pro Gly Met Asp Gly Pro Lys
1 5 10 15

Val Lys Gln Trp Pro Leu Thr Glu Glu
20 25

<210> 44
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ANTIGEN

<400> 44
Ala Ile Phe Gln Ser Ser Met Thr Lys Ile Leu Glu Pro Phe Arg Lys
1 5 10 15

Gln Asn Pro Asp Ile Val Ile Tyr Gln

<210> 45

<211> 25

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 45

Asn Pro Asp Ile Val Ile Tyr Gln Tyr Met Asp Asp Leu Tyr Val Gly
1 5 10 15

Ser Asp Leu Glu Ile Gly Gln His Arg
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<210> 46

<211> 25

<212> PRT

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<400> 46

Asp Leu Glu Ile Gly Gln His Arg Thr Lys Ile Glu Glu Leu Arg Gln
1 5 10 15

His Leu Leu Arg Trp Gly Leu Thr Thr
20 25

<210> 47

<211> 25

<212> PRT

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 47

Pro Leu Thr Glu Glu Ala Glu Leu Glu Leu Ala Glu Asn Arg Glu Ile

1

5

10

15

Leu Lys Glu Pro Val His Gly Val Tyr
20 25

<210> 48

<211> 25

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 48

Glu Ile Gln Lys Gln Gly Gln Gly Gln Trp Thr Tyr Gln Ile Tyr Gln
1 5 10 15

Glu Pro Phe Lys Asn Leu Lys Thr Gly
20 25

<210> 49

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: HIV PEPTIDE
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<400> 49

Asn Pro Asp Ile Val Ile Tyr Gln Tyr
1 5

<210> 50

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
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<400> 50

Phe Pro Val Arg Pro Gln Val Pro Leu

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<210> 51

<211> 9

<212> PRT

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<400> 51

Thr Pro Pro Leu Val Lys Leu Trp Tyr

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5

<210> 52

<211> 10

<212> PRT

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<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 52

Glu Pro Ile Val Gly Ala Glu Thr Phe Tyr

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5

10

<210> 53

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 53

Ser Pro Ala Ile Phe Gln Ser Ser Met

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<210> 54

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 54

Tyr Pro Leu Thr Phe Gly Trp Cys Phe
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<210> 55

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 55

Glu Pro Ile Val Gly Ala Glu Thr Phe
1 5

<210> 56

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 56

Val Pro Leu Asp Lys Asp Phe Arg Lys Tyr
1 5 10

<210> 57

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

<400> 57
Arg Pro Gln Val Pro Leu Arg Pro Met Thr Tyr
1 5 10

<210> 58
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 58
Ile Pro Leu Thr Glu Glu Ala Glu Leu
1 5

<210> 59
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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ANTIGEN

<400> 59
Asp Pro Asn Pro Gln Glu Val Val Leu
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<210> 60
<211> 9
<212> PRT
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<220>
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ANTIGEN

<400> 60
Arg Pro Ile Val Ser Thr Gln Leu Leu
1 5

<210> 61

<213> Artificial Sequence

<223> Description of Artificial Sequence: HIV PEPTIDE
ANTIGEN

Leu Pro Cys Arg Ile Lys Gln Ile Ile

5